

**CENTRAL ILLINOIS LIGHT COMPANY**

**ELECTRIC TRANSMISSION AND DISTRIBUTION  
RELIABILITY REVIEW**

**83 ILLINOIS ADMINISTRATIVE CODE  
SUBCHAPTER C, PART 410,**

**1999 ANNUAL REPORT**

**RE-SUBMITTED JULY 2000**

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**ANNUAL REPORT 411.120 b) 3**

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## **1. Operating Area and Qualitative Characterization**

The Central Illinois Light Company's electric service territory covers 3700 square miles, 136 communities and approximately 197,310 customers. The service territory is comprised of 105 distribution substations with 299 feeders, 14 transmission and switching stations, and 49 industrial/wholesale substations. 37.8% of the distribution feeders are urban in nature. This service area contains the cities of Peoria, East Peoria, Pekin, Lincoln, the outlying areas of Springfield, and other small communities in central Illinois. CILCO's distribution system consists of approximately 23% underground circuits and 77% overhead circuits.

A large portion of CILCO's electric distribution system (37.8%) serves customers in rural areas on radial lines and is not capable of being fed from another source. As such, these types of feeders have a greater exposure to weather extremes, which impact the frequency of electric service outages and service restoration efforts.

The Transmission and Distribution enhancement programs itemized in section 2B pages 5-8, ensure that the CILCO facilities are inspected and maintained on a regular basis. Based on these programs and CILCO's reliability indices, it can be generally concluded that the existing facilities are in good condition and provide our customers with safe and reliable service.

## **2. 1999 Expenditures – expressed in constant 1998 dollars**

- A. CILCO uses mass accounting principles for the distribution system. The total depreciated cost of distribution plant in service is \$295,384,800 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 65.7%. The 1999 capital expenditure for distribution plant was \$18,576,000 and O & M expenditure was \$12,407,000, for a total of \$30,983,000 or 10.5% of plant in service. Location accounting principles are used for the transmission system. The total depreciated cost of transmission plant in service is \$41,166,100 and the average remaining depreciation lives expressed as a percentage of total depreciation lives is 61.0%. The 1999 capital expenditure for transmission plant was \$515,000 and O & M expenditure was \$1,626,000, for a total of \$2,141,000 or 5.2% of plant in service.

- B. Previous enhancement programs initiated and included in the T & D expenditures above are:

<u>Specific Program</u>	<u>Explanation</u>
Tree Trimming	Trimming of distribution feeders on a targeted 4-year cycle and a vegetation management program for the transmission system.
Transmission Switch Maintenance	Transmission and sub-transmission switches checked and adjusted/repaired as necessary on a targeted 3-year cycle.
Infrared Testing	Annually, all transmission and distribution substations are inspected for abnormal heating of components. Infrared equipment was purchased allowing for inspections on an as needed basis.
Substation Inspection	All transmission and distribution substations are visually inspected monthly.
Transformer Oil Testing	Annual testing of major substation's transformer oil for gas by-products; other transformers are tested on a 2-year cycle.
Substation Maintenance	Periodic maintenance and testing performed on substation equipment (oil circuit breakers, transformers, batteries, etc.) based upon CILCO's experience, manufacturer's recommendations, number of operations, or time.
Protective Relay Testing	Periodic testing of all transmission line protective relays at generating stations on a 3-year cycle.
Load Flow Analysis	Weekly analysis of the transmission system performed on proposed work activities for the upcoming week to determine if any planned outages will cause line loadings to exceed emergency ratings.

Animal Protective Guards	Installation of squirrel guard protection devices in distribution substations and on distribution transformers where animal contacts have occurred.
Outage Reports	Computer generated reports produced monthly and annually for all operating and engineering departments for evaluation of outage causes and system reliability.
Transformer Load Management	Determines distribution transformer loading by converting KWH and KW to KVA demand; the program is run semi-annually and indicates summer and winter peak demands on transformers.
Cable Replacement Program	Monthly analysis of Underground Cable Failure Reports to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections.
Underground Network Protectors	Periodic testing of all protectors on network transformers performed on a 4-year cycle.
Aerial Line Patrols	Transmission and sub-transmission lines are patrolled 3 times yearly utilizing contract aircraft and company personnel to inspect facilities.
Distribution Feeder Patrol	Driving and/or foot patrols of each distribution feeder are conducted two times a year to inspect facilities.
Worst-circuit Analysis	Annual analysis of worst performing distribution feeders with appropriate measures taken to improve reliability.
Specific High Outage Analysis	Periodic analysis of reports to pinpoint specific areas where frequency of outages is above average.

Mobile Data	Improvement to work management practices for field service technicians by improving dispatching and routing of orders. Helps service technicians to meet scheduled appointments.
Primary Analysis	Periodic review of Primary Analysis reports used to balance feeders and correct overloaded equipment to improve system reliability.
Weather Radar Reporting	Computer software and hardware purchased to receive and display weather data and storm development, intensity, and movement.
Air Flow Spoilers	Tubular plastic rod design to wrap around existing conductor to prevent or retard galloping due to ice and wind.
T2 Conductor	Twisted pair conductor developed to prevent or retard galloping due to ice and wind.
Oval Conductor	New conductor with anti-gallop tendencies similar to T2.
Distribution Studies	Perform various distribution studies as required. In 1999 a study was completed on the emergency restoration for the downtown Peoria network. The study included the evaluation of the network under a variety of emergency conditions and identified limitations in system operation.
Other Distribution Projects	Distribution system strengthening not included above; items may be single year or multiple year projects.
Other Substation Construction Projects	Major and minor substation projects not included above; items may be single year or multiple year projects.

- C. For 1999, an additional expenditure of \$9,429,700 is not included in “A” above for the following reliability enhancement programs:

In 1999, a Resource Management System was installed to improve the business process related to work planning, scheduling and material management. Related expenditure for 1999- \$483,000.

In 1999, a new Energy Management System was installed. This three-year project will replace the existing 25-year-old system and increase our existing capabilities. The new system will enhance CILCO’s ability to monitor and control the safety, reliability and security of the electric system. Related expenditure for 1999 - \$1,097,600.

On January 25, 2000, phase one of the Automated Mapping / Facilities Management/ Geographical Information System Project was completed. This project includes the replacement of the existing TAPS outage product with a new product called PowerOn (completed 1/25/00). This project will improve the management of service restoration, ICC reporting, and distribution planning. Related expenditure for 1999 - \$3,913,600.

In 1999, CILCO successfully implemented the LOADSTAR suite of products for billing of commercial, industrial and deregulated customers. Enhancements were also made to CILCO’s existing Customer Information System, Andersen Consulting’s CUSTOMER/1™, to accommodate functionality specific to deregulation which was effective on October 1, 1999. Specifications for requirements relating to the unbundling of meter services are currently being identified and implemented in preparation for a September 2000 deadline. CILCO is continuously assessing various software applications currently available in the marketplace that meet the rapidly changing needs of our customers. In 2000, we will pursue an integrated solution that will allow us to continue to provide accurate, complete and timely information for our customers. Related expenditure for 1999 - \$3,935,500.

### **3. Proposed Expenditures**

- A. The capital and O & M budget for the next four years is as follows:

<b>YEAR</b>	<b>CAPITAL</b>	<b>O &amp; M</b>	<b>TOTAL</b>
2000	\$18,916,500	\$16,507,900	\$35,424,400
2001	\$18,916,500	\$16,507,900	\$35,424,400
2002	\$18,916,500	\$16,507,900	\$35,424,400
2003	\$18,916,500	\$16,507,900	\$35,424,400



B. Specific Projects addressing foreseeable reliability challenges:

- Perform a distribution study of the 34.5KV system in the Lincoln, IL. area. Results of the study to determine the exact location of an additional 15/20/25 MVA transformer to prevent an overload condition at station 168 with one transformer out of service. Total estimated expenditure for 2000 is \$400,000.
- Substation 181 - Transformer and Feeder addition - \$550,000. An outage of a section of the transmission line serving substation 097 forces it to be fed from a long radial path. System Planning studies have shown that the load at the substation will reach a point where the single contingency voltage drop criteria of 7% will be exceeded. A method of relieving the load on this substation and the overload on feeder no. 1 was developed which requires an additional feeder to be constructed in 2000 at an adjacent substation (181). Load will be transferred from 097-001 to 181-001. The estimated cost of the 2000 expenditure is \$550,000.
- Distribution Feeder 370-3 – Transfer load from 370-2 to 370-3 - \$8,000. Expenditures allow for the transfer of load to relieve an overloaded (108%) feeder cable exit.
- Distribution Feeder 372-3 – Add feeder exit and feeder -\$300,000. Expenditures allow for the addition of a new substation exit and third feeder. The load on the existing feeder no. 2 exceeds the design criteria for feeder loading.
- Substation 49 – Replace existing regulators - \$25,000. Expenditures allow for the replacement of overloaded (140%) feeder #1 regulators with larger units.
- Substation 119 – Replace existing regulators - \$25,000. Expenditures allow for the replacement of overloaded (150%) feeder #2 regulators with larger units.
- Review primary analysis on a yearly basis –approximately \$100,000. Issue job orders to replace or correct overloaded protective devices and balance feeders to improve reliability and reduce losses. This is related to the primary analysis program listed in 2B.
- Substation 17 – Replace 3-15kv breakers - \$50,000. Expenditures allow for the replacement of three high maintenance 15 KV distribution breakers with more reliable units.

- Replace batteries and/or chargers – various substations - \$50,000. Expenditures allow for the replacement of existing high maintenance, low reliability batteries and or battery chargers with new units at seven locations: 49, 145, 179, 240, 316, 348, & 362.
- Underground Cable Replacement - \$1,000,000: Expenditures are for the replacement of underground cable. This is related to the cable replacement program listed in 2B.

C. An additional estimated expenditure of \$2,845,100 for 2000 is not included above for the following reliability enhancement programs.

In 2000, the remaining portion of the new Energy Management System will be completed. This three-year project will replace the existing 25-year-old system and increase our existing capabilities. The new system will enhance CILCO's ability to monitor and control the safety, reliability and security of the electric system. Estimated expenditure for 2000- \$298,600.

On January 25, 2000, the Automated Mapping / Facilities Management/ Geographical Information System Project was completed. This project includes the replacement of the existing TAPS outage product with a new product called PowerOn (completed 1/25/00). This project will improve the management of service restoration, ICC reporting, and distribution planning. In 2000, a Graphic design application will be installed, along with the Transformer Load Management and analytical interface. Related expenditure for 2000 - \$1,239,400.

In 1999, CILCO successfully implemented the LOADSTAR suite of products for billing of commercial, industrial and deregulated customers. Enhancements were also made to CILCO's existing Customer Information System, Andersen Consulting's CUSTOMER/1™, to accommodate functionality specific to deregulation which was effective on October 1, 1999. Specifications for requirements relating to the unbundling of meter services are currently being identified and implemented in preparation for a September 2000 deadline. CILCO is continuously assessing various software applications currently available in the marketplace that meet the rapidly changing needs of our customers. In 2000, we will pursue an integrated solution that will allow us to continue to provide accurate, complete and timely information for our customers. Expended prior to 2000 - \$5,273,500. Related expenditure for 2000 - \$1,307,100.

#### **4. Deviations and Reasons for Deviations from Proposed Expenditures for the First Year of the Previous Plan.**

- Substation 097-138 kV Conversion - \$30,000: An outage of a section of the transmission line serving this substation forces it to be fed from a long radial path. System Planning studies have shown that the load at the substation will reach a point where the single contingency voltage drop criteria of 7% will be exceeded. The solution to this problem is the conversion of the substation from 69 kV to 138 kV. This is a multi-year project to be completed in 2001. An alternate method of relieving the load on this substation was developed which allows for the deferral of this project. An additional feeder will be constructed in 2000 at an adjacent substation. Load will be transferred from 097-001 to 181-001. The estimated cost of the 2000 expenditure is \$550,000.
- Network Additions Substation 027 - \$200,000: Expenditures allow for the installation of a new transformer, protectors, and secondary cables to avoid overloads on the network serving downtown Peoria. 1999 expenditures - \$125,200. The balance of the work is scheduled to be completed June 1, 2000.
- Network Additions Substation 042 - \$50,000: Expenditures allow for the installation of various secondary cables to avoid first contingency overloads on the network serving downtown Peoria. 1999 expenditures - \$17,000. A portion of the work is to be completed in 2000 and the remainder is being deferred until the final plans for the I-74 revisions are reviewed.
- Circuit 036-002 Rebuild- \$200,000: Expenditures to include the rebuild of approximately 10 miles of the distribution line serving commercial and residential customers, to reduce the number of outages in the area. It is a multi-year project. The 1999 work completed included the installation of a recloser, fuse co-ordination and additional arrester installation. This work has eliminated customer outage complaints and the need for additional expenditures. 1999 expenditures - \$15,200.
- Circuit 184-006 Addition - \$360,000: The addition of this feeder will provide load relief to feeders 184-002, 184-005 and 388-001. Construction of circuit 184-006 completed as proposed in 1999. Additional work at this substation scheduled for 2000 to transfer load between feeders. 1999 expenditures - \$195,800.

- Circuit 510-001 Rebuild - \$100,000: Expenditures include the rebuild of a portion of this feeder to avoid reliability problems due to significantly increased load. This distribution circuit was patrolled and numerous repairs were made in 1999 to improve reliability. Improvements included the addition of lightning arresters and the replacement of cross-arms and braces where needed. Estimated expenditure in 1999 was \$15,000. Additional work was deferred until the completion in 2000 of a detailed study of the transmission and distribution system serving this area. Estimated cost of the study is \$40,000.
- Underground Cable Replacement - \$1,000,000: Expenditures are for the replacement of underground cable. This is related to the cable replacement program listed in 2B. Underground cable expenditures for 1999 - \$1,750,000.

## 5. Customer Satisfaction Survey

During October of 1999, an independent telephone survey of 400 active residential accounts and 400 active non-residential accounts was randomly conducted. The survey was conducted to meet the requirements of Part 411.120 covering the four areas of (1) satisfaction of reliability; (2) satisfaction of customer service; (3) customer understanding of jurisdictional services; and (4) customer understanding of jurisdictional prices. Survey results were as follows:

### 1. Reliability:

Overall satisfaction of providing reliable electric service – 97.5% satisfied or had no opinion.

Keeping the electric system, including power lines and equipment in good working order – 97.1% satisfied or had no opinion.

Minimizing the number of power outages lasting longer than 1 minute – 93.4% satisfied or had no opinion.

### 2. Customer service – How would you rate CILCO in:

Restoring electric service at your residence/business when outages occur – 94.5% satisfied or had no opinion.

Providing information about extended outages – 89.2% satisfied or had no opinion.

Being accessible during an outage – 91.8% satisfied or had no opinion.

3. Jurisdictional Services:

Are you aware that CILCO has a toll-free number to report outages?

Yes	83.3%
No	10.3%
Don't Know	6.5%

Are you aware that CILCO is available 24 hours a day, 7 days a week by telephone in case of a power outage?

Yes	90.8%
No	5.0%
Don't Know	4.1%
Refused	.1%

Are you aware that CILCO reports information about an extended power outage to the news media to keep customers informed?

Yes	73.0%
No	15.0%
Don't Know	12.0%

Are you aware that CILCO trims trees to reduce the occurrence of power outages?

Yes	83.8%
No	8.9%
Don't Know	7.4%

4. Jurisdictional Prices:

Are you aware, that the cost to provide services to reduce the number and duration of power outages, such as repairing and replacing electrical equipment, sending work crews to restore power, and trimming trees is reflected in the price you pay for electric distribution service?

Yes	73.6%
No	20.9%
Don't Know	5.5%

Do you receive a bill from CILCO at this address?

Yes	95.5%
No	3.6%
Don't Know	.8%
Refused	.1%

Do you personally see or handle this bill?

Yes	80.8%
No	19.2%

How would you rate CILCO on providing a bill that makes it easy to tell how much the current month's charges are? 95.4% satisfied or had no opinion.

## **6. Reliability Complaints**

### **A. Other Entities**

There were no reliability complaints and no unresolved reliability complaints exist about the CILCO system received from other utilities, independent system operators, or alternative retail electric suppliers.

No plan of action required.

### **B. Overview of Customer Reliability Complaints**

1999 - CILCO received 8 informal electrical reliability complaints to the Illinois Commerce Commission in 1999. All complaints have been resolved.

1998 - CILCO received 24 informal electrical reliability complaints to the Illinois Commerce Commission in 1998. All complaints have been resolved. Nine of the complaints were related to tree contact problems on one feeder. Tree trimming on this feeder was completed in the first quarter of 1999.

1997- CILCO received 1 informal electrical reliability complaint to the Illinois Commerce Commission in 1997. The complaint was resolved.

1996 - CILCO received 3 informal electrical reliability complaints to the Illinois Commerce Commission in 1996. All complaints have been resolved.

## 7. Interruption and Indices Reports

### A. Planned and Unplanned Interruptions and Impact On Customers

1999 Planned (scheduled) Interruptions and Duration – There were 171 interruptions that impacted 8,780 customers with an average duration per customer interrupted (customer hours ÷ customers interrupted) of 1.07 hours.

1999 Unplanned (unscheduled) Interruptions and Duration – There were 4,312 interruptions that impacted 359,349 customers with an average duration per customer interrupted (customer hours ÷ customers interrupted) of 2.13 hours.

### B. Number and causes of Controllable Interruptions

Cause of Interruptions	No. of Interruptions
Tree related	94
Underground Equipment Related	63
Animal Related	49
Employee/Contractor Personnel Errors	35
Weather Related	5
Overhead Equipment Related	1
<b>TOTAL</b>	<b>247</b>

### C. Independent system operator, other utility or alternative retail electric supplier.

1999 interruptions due to another utility – There were 7 interruptions with a duration of 2,644.89 customer outage hours.

### D. Comparison of Interruption Frequency and Duration for CILCO customers vs. customers supplied by another entity.

No customers supplied by another entity.

### E. Reliability Indices – 1999

SAIFI	1.82
CAIDI	2.13
CAIFI	2.35

F. Reportable Interruption Summary –

The CILCO service territory experienced several severe weather outbreaks in 1999, which increased the number of outages. The outage percentage by cause codes for 1999 were as follows:

CAUSE	PERCENTAGE
Weather Related	20.53
OH Equipment Related	17.47
UG Equipment Related	15.83
Animal Related	14.55
Intentional	11.46
Tree Related	7.63
Public	6.14
Unknown	4.04
Trans./Substation Equipment	1.09
Company/Contractor Errors	1.03
Other	.25

8. Worst Performing Circuits –

SAIFI (outages/customer)	CAIDI (hours/outage)	CAIFI (outages/customer)
99-128-006 - 6.87	99-127-006 – 12.14	99-128-006 – 6.80
99-045-001 - 5.68	99-610-001 – 8.58	99-045-001 – 5.59
99-085-002 - 5.37	99-145-004 – 8.47	99-085-002 – 5.36

A. Highest SAIFI –

Feeder 99-128-006 – 6.87

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder experienced several severe lightning storms during the year. Seventeen of thirty-two outages experienced were related to storms, including one tornado. Five other outages were due to the failure of underground equipment and two were related to scheduled maintenance. Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections. Primary Analysis reports are periodically reviewed to balance feeders and correct overloaded protection equipment to improve system reliability.



Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. There were no sections of underground cable on this feeder, which met or exceeded the guidelines requiring replacement due to cable failures. No specific additional work is scheduled for this feeder at this time.

Feeder 99-045-001 – 5.68

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder experienced 17 outages. Of the 17 outages, four were related to one vehicular accident and three were related to one cable failure. Two other cable failures occurred. Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections. Primary Analysis reports are periodically reviewed to balance feeders and correct overloaded protection equipment to improve system reliability.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. There were no sections of underground cable on this feeder, which met or exceeded the guidelines requiring replacement due to cable failures. No specific additional work is scheduled for this feeder at this time.

Feeder 99-085-002 – 5.37

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder experienced several severe lightning storms during the year. 49% of the outages experienced were related to weather. Eight outages were related to underground failures. The remaining outages (10) were related to ten different cause codes with three outages being for emergency repairs. Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections. Primary Analysis reports are periodically reviewed to balance feeders and correct overloaded protection equipment to improve system reliability.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. There were no sections of underground cable on this feeder, which met or exceeded the guidelines requiring replacement due to cable failures. No specific additional work is scheduled for this feeder at this time.

B. Highest CAIDI – 1999

Feeder 99-127-006 – 12.14

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder only experienced two outages in 1999, and 90% of the customer hours of outage were due to an outage, which was not restored until the next day with the permission of the customer.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention.

No specific additional work is scheduled for this feeder at this time.

Feeder 99-610-001 – 8.58

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder only experienced three outages in 1999, but the outage due to a tornado on June 4, 1999 accounted for 97.5% of the customer hours of outage. Lightning caused one additional outage, and an outage was required to replace a bad arrester.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention.

No specific additional work is scheduled for this feeder at this time.

Feeder 99-145-004 – 8.47

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder only experienced one outage (unknown cause) in 1999.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention.

No specific additional work is scheduled for this feeder at this time.

C. Highest CAIFI – 1999

Feeder 99-128-006 – 6.80

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder experienced several severe lightning storms during the year. Seventeen of thirty-two

outages experienced were related to storms, including one tornado. Five other outages were due to the failure of underground equipment and two were related to scheduled maintenance. Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections. Primary Analysis reports are periodically reviewed to balance feeders and correct overloaded protection equipment to improve system reliability.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. There were no sections of underground cable on this feeder, which met or exceeded the guidelines requiring replacement due to cable failures. No specific additional work is scheduled for this feeder at this time.

Feeder 99-045-001 – 5.59

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder experienced 17 outages. Of the 17 outages, four were related to one vehicular accident and three were related to one cable failure. Two other cable failures occurred. Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections. Primary Analysis reports are periodically reviewed to balance feeders and correct overloaded protection equipment to improve system reliability.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. There were no sections of underground cable on this feeder, which met or exceeded the guidelines requiring replacement due to cable failures. No specific additional work is scheduled for this feeder at this time.

Feeder 99-085-002 – 5.36

Operating and Maintenance History: This feeder is patrolled semi-annually; major defects found on patrols are fixed immediately and minor defects are repaired as conditions warrant. The area served by this feeder experienced several severe lightning storms during the year. 49% of the outages experienced were related to weather. Eight outages were related to underground failures. The remaining outages (10) were related to ten different cause codes with three outages being for emergency repairs. Monthly analysis of Underground Cable Failure Reports is performed to determine segments of cable that have failed more than 3 times in the past year. Work orders are prepared to replace bad cable sections. Primary Analysis reports are

periodically reviewed to balance feeders and correct overloaded protection equipment to improve system reliability.

Action planned or taken to Improve Reliability:

Analysis of the outage history revealed no specific trouble spots requiring attention. There were no sections of underground cable on this feeder, which met or exceeded the guidelines requiring replacement due to cable failures. No specific additional work is scheduled for this feeder at this time.

## **9. Status of Planned Actions in Prior Annual Report**

### **A. 1998 Worst Performing Circuits (SAIFI)**

Feeder 98-173-002

No specific work was scheduled.

Feeder 98-181-001

No specific work was scheduled.

Feeder 98-367-002

No specific work was scheduled.

### **B. 1998 Worst Performing Circuits (CAIDI)**

Feeder 98-024-002

No specific work was scheduled.

Feeder 98-028-001

No specific work was scheduled.

Feeder 98-236-002

No specific work was scheduled.

## **10. Total Number of Customers Experiencing a Set Number of Interruptions**

Not Applicable Prior to 2001

## **11. Customers Experiencing Interruptions in Excess of Service Reliability Targets**

Not Applicable Prior to 2001

## **12. Company Contact**

For further information regarding this report, contact:

Gene Lindholm  
System Operations, Analysis and Planning  
Central Illinois Light Company  
300 Liberty Street  
Peoria, Illinois 61602  
Phone: 309-693-4751  
Fax: 309-693-4859  
Email: [glindholm@cilco.com](mailto:glindholm@cilco.com)

07/24/2000